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AN ENTERPRISING SPIDER

The fun thing about living in Silicon Valley is that it's so techno-weird. Drive down a highway anywhere else in the US and the billboards are about cigarettes and automobile tires. Drive down US 101 between Redwood City and San Jose, and you get ads for databases and semiconductor fabrication equipment.

The cover of the typical American newspaper is filled with sex and political scandals, murders, elections, and sports. The cover stories of my October 16 *San Jose Mercury News* include "GTE Joins MCI Bidding," "Cassini Is Bound for Saturn," "Sun Plans Swift Start on Santa Clara Campus," and two articles on Bay Area Nobel prizes. Above the banner are references to other sections: "Apple's '97 Loss," "Solelectron's Baldrige Award," and, in a concession to the techno-naïve, "The Indians Reach the World Series."

Of course there's also the Internet equivalent of a sex scandal: "Java Suit Gets More Bitter with Latest Legal Maneuver."

JAVA WARS

To remind those of you whose surfing skips the news, Sun has accused Microsoft of trying to subvert Java by subtle mutation. The surface text is whether Microsoft is violating a contract to provide unadulterated Java. The subtext is: Can a company achieve

world domination by subtly manipulating Web browsers? Hot stuff.

So the Spider crawled off to see what the principals had to say about all this.

The Source for Java •

java.sun.com

Visited 27 October 1997

The Spider first stopped at Sun's site. Here Sun presents its complaint, a copy of its contract with Microsoft, and comments on the matter from Net correspondents. Sun notes: "We believe the contracts will speak for themselves." As a spider who has succeeded in avoiding law school, let me comment that the contract itself is completely unintelligible (though admittedly the actual complaint is somewhat easier to follow). The user comments were, by this Spider's count, 34–4 in Sun's favor.



Brownie points for tolerating dissent, but demerits for suggesting that a contract means anything if you haven't studied contracts. Or even if you have.

Microsoft Press Pass •

www.microsoft.com/corpinfo/java.htm

Visited 27 October 1997

The Microsoft site is more polished, with two sets of questions and answers about the dispute, a letter to its customers, Microsoft's corporate response, and, once again, the actual

5 Flies=					
Scrumptious					
4 Flies=					
Tasty					
3 Flies=					
Filling					
2 Flies=					
Edible					
1 Fly=					
Yuck!					

contract. Unlike Sun, Microsoft does not publish the unedited random comments of Netizens. I suspect they fear contributors might not be as friendly. Besides, since these Netizens don't work for Microsoft, their opinions don't really matter.

The Spider considered it a bit of an omen that when he tried to read the Microsoft version of the contract in Netscape on a 680x0 Mac, the system repeatedly crashed. However, as he has since been able to read it in Netscape on both Sun and Wintel machines, perhaps a moderation of an arachnoid's natural paranoia is in order.



The Spider tries to be fair.

JavaWorld •

www.javaworld.com/jw-10-1997/jw-10-sdk.html

John Zukowski

Visited 24 October 1997

The best technical discussion I've found of what's different about Internet Explorer is John Zukowski's article in *JavaWorld*. He cites concerns: "new classes, methods, and variables; the com.ms packages; missing methods; and behavioral differences." Zukowski finds these differences more critical than the lack of Java Native Interface and Remote Method Invocation support. He details the differences and tells how to write portable code despite them.



A good bit of detective work, concisely presented.

Where does the truth lie? Damned if this spider can tell. My reading of the popular press suggests that for a contract that speaks for itself, it sure sup-

ports a diversity of legal opinions. The Spider remains an eager spectator. Better than a sex scandal any day.

INTERNET ECONOMICS

Leaving Sun and Microsoft to their respective battles, the Spider moved on to some calmer sites.

FirstMonday •

www.firstmonday.dk/

Edward J. Valauskas, Chief Editor
Visited 25 October 1997

Printed articles about the Internet have an oxymoronic, anti-recursive perversity. *FirstMonday* is a purely electronic, refereed, and edited academic journal about the Internet, appearing monthly (guess when). Its principal concerns are the social, technical, economic, political, and regulatory issues affecting the Internet. The Spider sampled a few of the articles (on Internet economics) and found the usual distribution between the pedantic and the pithy. He reports below on four of them. But first, the site rating:



The Spider really liked the cost of publishing an article, but things went downhill from there.

"The Economics of Electronic Journals" •

www.firstmonday.dk/issues/issue2_8/odlyzko/

Andrew Odlyzko

This article is an excellent discussion of the costs and profits of electronic publishing, backed up by considerable numeric analysis. Odlyzko (who is head of mathematics and cryptography research at AT&T Labs) argues that the profits of scholarly journal publishers are "phenomenally high, comparable as a fraction of revenues to the profits . . . of Microsoft." Despite publishers' disclaimers, the potential reduction in costs in going to electronic publication is substantial (at least a factor of four, and more likely two orders of magnitude). Citing Andrew Grove, Odlyzko notes that when the economics change that much, the underlying rules change. He's not sure exactly when the current system of scholarly publishing will collapse, only that driven by the real costs of the current library sys-

tem, it will—in the relatively near future.

"Taxation of Internet

Commerce" • www.firstmonday.dk/issues/issue2_10/muscovitch/

Zak Muscovitch

This is a relatively elementary discussion of the tax implications of Internet commerce. Too much of the article is devoted to explaining the Internet, a curious action given the domain of the over-riding journal. Muscovitch argues that taxing Internet transactions is close to impossible, since it's easy to set up a Web server in a tax haven. He suggests that since such transactions impose little in the way of demand for government services, not taxing them may not be so bad. Frankly, I hadn't noticed a large correlation between the excuse for a tax and the government cost for the activity that prompted that tax—governments seem most eager to tax whatever's most profitable and least well politically defended.

"Bytes of Cash: Banking, Computing, and Personal

Finance" • www.firstmonday.dk/issues/issue5/philips/

Jim Philips

Philips gives an overview of the meaning of money (it's information) and the ways it gets distributed through the economy. He observes that digital cash has the potential for creating a more efficient economic system, as middlemen and governments are exfoliated. Of course, efficiency can be a two-edged sword—Philips cites the common belief that the October 1987 stock market crash was caused by increased computer-driven efficiencies. Ah well. As Herzog noted, nothing succeeds as planned.

"The Attention Economy and the Net" •

www.firstmonday.dk/issues/issue2_4/goldhaber and

"What's the Right Economics for Cyberspace" • www.firstmonday.dk/issues/issue2_7/goldhaber/

Michael H. Goldhaber

In these articles, Goldhaber argues that the Net works from the basic desire of Net information providers to get attention and that this attention-

seeking behavior does not follow the rules of classical economics. While Goldhaber's argument that attention-seeking behavior is not uncommon is a convincing one, the Spider remains unsure as to how the classical economic costs of cyberspace would be sustained in a vanity-based model. Personally, the Spider has always tried to avoid relying on the attention of strangers. He'd much prefer they send cash. Even cybercash.

Everyone is Talking about Electronic Money •

www.agorics.com/interesting.html

Visited 25 October 1997

This site is a collection of references to other papers, principally about electronic money. The Spider is impressed by the collection, but sufficiently weary of the subject not to read them all. If you're not, and want to explore the nuances of smart cards and micropayments, check it out.



GETTING AND SPENDING

Turning from money in the abstract to, well, money in the abstract, the Spider thought he'd check on his Microsoft stock and then set out to do some shopping.

InfoBeat • www.infobeat.com

Visited 27 October 1997

Lots of places on the Web provide up to the 20-minutes-ago stock quotes. (Though on days like today there can be a problem getting through.) An interesting variant on this idea is *InfoBeat* (nee *Mercury Mail*), which for the mere cost of paying attention to their advertisements, will send you daily updates on the prices of your stocks and snippets of corporate news. (*InfoBeat* will also mail you things like sports scores, but here in Silicon Valley we don't pay attention to such things.) The Spider notes that he has been pleased with their service.



CompareNet: The Interactive Buyer's Guide • www.compare.net

Visited 25 October 1997

CompareNet promises to tell you about the alternatives for the product you're looking for, grouped within

your price range and winnowed by your answers to a few questions.

The Spider first tried shopping for printers costing between \$175 and \$400 (MSRP, CompareNet prompts with the available range). The Spider specified that he wanted a color printer that could print envelopes, that he didn't care about manual feed, energy star compliance, resolutions, input capacity, high-volume, or multifunction capability, and that he wasn't looking for a laser printer. CompareNet found 10 models from five manufacturers, and proffered a more detailed listing of the features of each. Well, there are more than 10 such printers, (like the one the Spider bought a few months ago) and the most important criterion (will it work on that old 680x0 Mac?) wasn't one of the questions.

Switching tacks, the Spider asked about sedans in the \$18-23K range, and was rewarded with 45 of them, all but one 97 models, and none the new one in the driveway. The Spider evidently has particularly nonstandard consumer tastes. (Check out <http://www.edmunds.com> for more comprehensive auto data.)

The net effect is that the system provides some data on some of the things you might think of buying. The Spider would normally take off a lot of points for such incompleteness, but given the fundamental impossibility of keeping up with incompatible manufacturers making incessant changes, all funded by attention, he's inclined toward clemency.



OnSale Auction Supersite •

www.onsale.com

Visited 27 October 1997

Lots of places on the Net are happy to sell you things for a price that's already been fixed. More amusing are the places that are happy to sell you something for a price yet to be deter-

mined—the online auction sites. OnSale is one such site. A variety of merchandise (typically high-tech consumer items) is advertised with alluringly low initial bids. Bidders around the Net compete, and after a day, the merchandise goes to the highest bidder. Ties are broken by who wants the most and who bid first. The site also employs a quiescence heuristic—bidding continues past the deadline till new bids appear to have stopped. Great fun, though the Spider is being careful not to scratch his nose, lest he end up with five refurbished 166-MHz Wintel machines. Though they'd probably run Internet Explorer just fine.

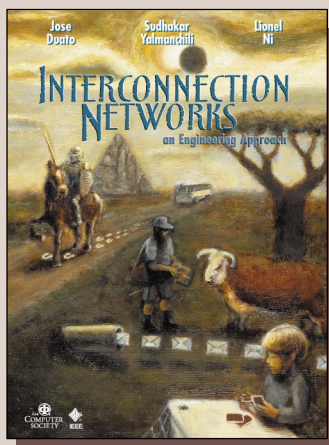


ABOUT THE SPIDER

The Arachnoid Tourist scours the Net to find and review Web sites of interest to our readers.

What makes a site interesting? TheSpider appreciates style but cares most about content. We welcome your suggestions of places to visit.

Contact Robert Filman at filman@atc.lmco.com, or Feniosky Peña-Mora at feniosky@mit.edu, or the magazine at internet-computing@computer.org.



Interconnection Networks

An Engineering Approach

by José Duato, Sudhakar Yalamanchili, and Lionel Ni

Addresses the challenges and basic underlying concepts of interconnection networks. *Interconnection Network's* engineering approach considers the issues that designers face and presents a broad set of practical solutions. The authors establish more accurate classifications for a number of different issues: topologies, switching techniques, routing algorithms and problems that prevent message delivery. The authors introduce new views that make concepts easier to understand, like the unified view of direct and indirect networks, the unified theory of deadlock avoidance and recovery.

The book is organized to serve as a reference as well as a resource for learning. Supporting materials including a network simulator will be available on the book's web site:

<http://computer.org/books>, considerably simplifying the task of teaching courses on interconnection networks and organizing lab classes. The web site will also serve as a forum for discussion and exchange of ideas for interconnection networks.

Contents: Introduction • Message Switching Layer • Deadlock, Livelock, and Starvation • Routing Algorithms • Collective Communication Support • Fault Tolerant Routing • Network Architectures • Message Layer Software • Performance Evaluation • Appendix • Bibliography

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